FP3: XR App

App Structure
Provide a brief description of how your app is structured. Did you divide your conditions into multiple scenes? Does a single scene contain multiple trials or a single trial? What script file is handling condition assignments?
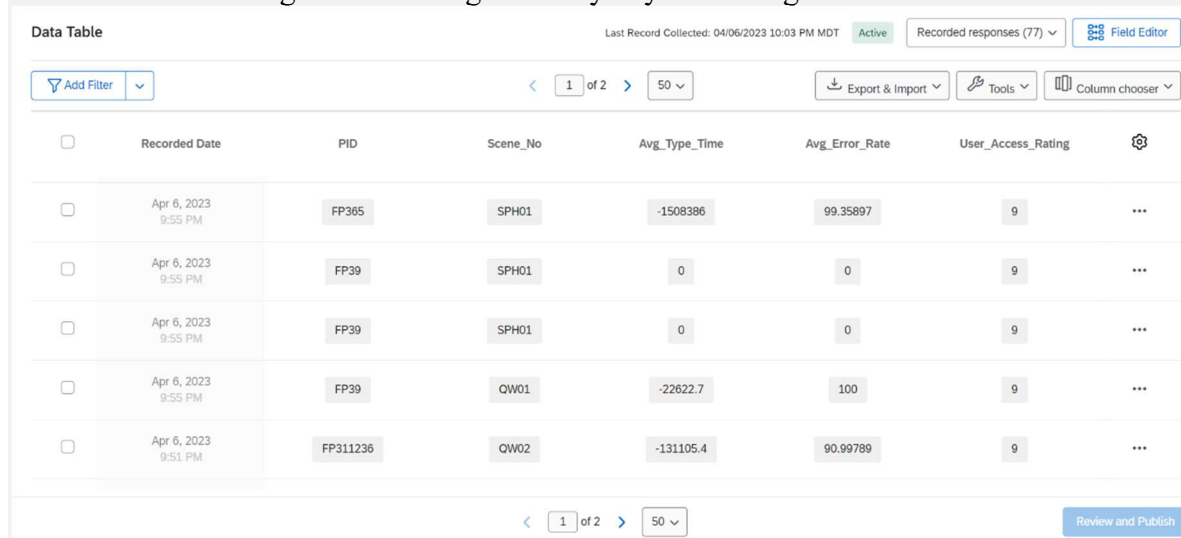
Our application provides multiple scenes where we start from the Introduction scene, this is where we ask user to enter participant ID, after which they are diverted to 4 different scenes specifying different condition that are Spherical Keyboard with and without controller, Qwerty Keyboard with and without controller. After all 4 scenes are completed the user is sent to the End scene where we ask them to complete a survey. Every scene we recommend user to rest for a few minutes before moving forward to the next scene.

Data Recording
How are the data recorded? Locally or online? Where are they stored? Provide a sample screenshot of a data file. What do the variables represent?

Out data is stored online using Qualtrics, our dataset is divided into two parts one which captures data for every conditional scene (e.g. Spherical Keyboard with Controller). The variables defined in those scenes are as follows: -
1. PID – Participant ID
2. Scene No – Scene Number
3. Avg Type Time – Average Typing Time per scene
4. Avg Error Rate – Average Error Rate per scene
5. User Access Rating – User Rating for every keyboard usage

Second variables in end scene are as follows: -
1. PID – Participant ID
2. Key Type- Keyboard preferred by user
3. Age – User's Age
4. Gender – User's gender
5. VR User – Type of VR Usage by user.
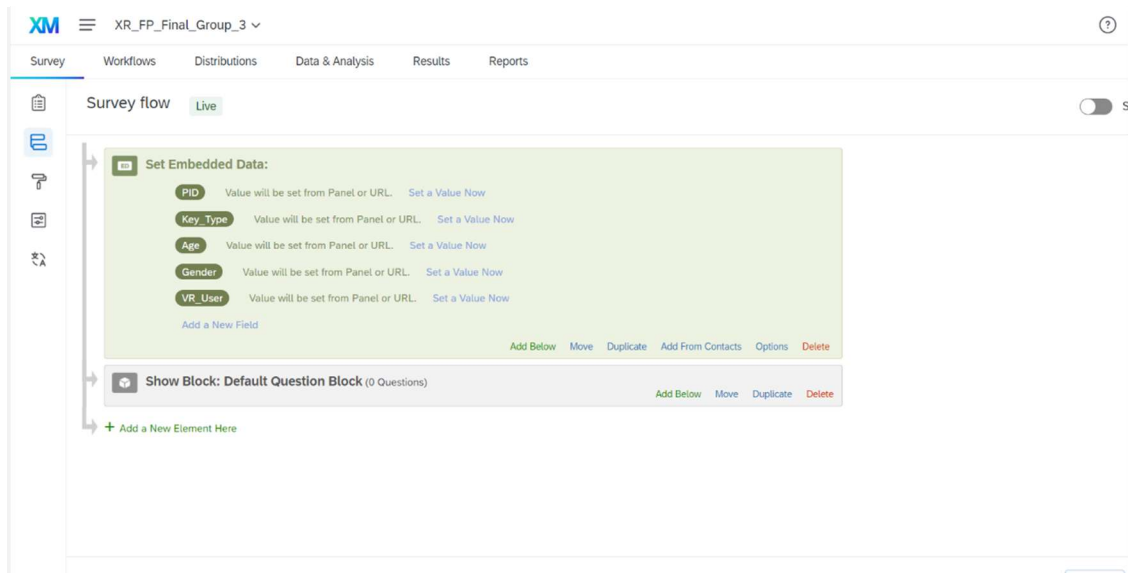
Experimental Variables

What are the manipulated (IVs) and measured (DVs) of your experiment? How did you compute DVs? Provide the custom formulas that you used in your code. For questionnaires, include a copy of the items.

Independent Variable are they Keyboard Type & Controller – Hand usage, while the Dependent Variables are Average Error Rate & Avg Typing Time.

Following are the formula's used in our code: -

1. Error Rate:

$$\frac{100 * MSD(P,T)}{max(|P|,|T|)}$$

2. WPM (Word per minute):

$$WPM = \frac{|T|-1}{S} \times 60 \times \frac{1}{5}$$

Your comments

If there are certain things that we should pay attention to while testing and evaluating your app, please mention them here.

The goal of this XR Development was to develop a spherical keyboard which would be a new way of text entry in the VR and XR Environment.